

REMARKS / ARGUMENTS

The present application includes pending claims 1-35, all rejected by the Examiner. Claim 18 of current application (hereafter '320) is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 18 of copending Application No. 10/652,327 (hereafter '327). Claims 18, 20, 22-29, 31 and 32 are rejected under 35 USC 102(e) as anticipated by Philbrick et al. (US Pub. No. 2001/0037406, hereafter Philbrick). Claims 1-15 are rejected under 35 USC 103(a) as being unpatentable over Applicant's Admitted Prior Art (background of the invention and FIG. 1-5, hereafter AAPA) and further in view of Philbrick. Claims 33-35, 30 are rejected under 35 USC 103(a) as being unpatentable over Philbrick as applied to claim 26 above, and further in view of Microsoft (Winsock Direct and Protocol Offload on SANs, 03/03/2001). Claims 16-17 are rejected under 35 USC 103(a) as being unpatentable over AAPA-Philbrick, as applied to claims 1 and 14 above, and further in view of Microsoft. Claims 19 and 21 are rejected under 35 USC 103(a) as being unpatentable over Philbrick, in view of what has been known in the art.

The Applicant traverses the rejections and submits arguments with respect to claims 1-35 and respectfully submits that the claims define patentable subject matter.

I. REJECTION UNDER DOUBLE PATENTING To Claims 18 and 26 – Submit Terminal Disclaimer

Claims 18 and 26 of current application (hereafter '330) are rejected on the ground of non statutory obviousness-type double patenting as being unpatentable over claims 18 and 26 of copending U.S. Application No. 10/652,327 (hereafter '327). The Examiner states on pages 2 and 3 in the Office Action that:

"Although the conflicting claims are not identical, they are not patentably distinct from each other because both of the claims recite using a single chip to process a plurality of different types of network traffic (line 2 of '330 and (b) of '327), and an Ethernet connector coupled to the integrated chip that handles a plurality of different types of traffic (lines 3-5 of '330 and (a) of '327)."

The Applicant respectfully traverses this rejection, but nevertheless is submitting herewith a Terminal Disclaimer in compliance with 37 C.F.R. §1.321(c), to obviate the double patenting rejection and respectfully requests that claims 18 and 26 be allowed.

II. REJECTION UNDER 35 U.S.C. § 102(e)

MPEP 2131 states:

"[a] claim is anticipated only if **each and every element** as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." See MPEP at 2131 (internal citation omitted). Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the ... claim." See *id.* (internal citation omitted).

The Proposed Philbrick (US Pub No. 2001/0037406) Does Not Anticipate Claims 18, 20, 22-29, 31 and 32 As Unpatentable

The Applicant turns to the rejection of independent claim 18 under 35 U.S.C. § 102(e) as being anticipated by Philbrick et al. (US Pub No. 2001/0037406 hereafter Philbrick). The Applicant submits that Philbrick does not teach at least the limitations of **“an integrated chip; an Ethernet connector coupled to the integrated chip, wherein the Ethernet connector and the integrated chip can handle a plurality of different types of traffic”** as recited by the Applicant in the independent claim 18.

A. Rejection of Independent Claim 18

With respect to independent claim 18, in the Office Action, the Examiner states in the Office Action at page 4 that Philbrick discloses a server, comprising:

“an integrated chip (fig. 6, processor 408);
an Ethernet connector coupled to the integrated chip ([0066] lines 12-15, Ethernet connector 424 which is a MAC controller), wherein the Ethernet connector and the integrated chip can handle a plurality of different types of traffic ([0065] lines 15-21, iSCSI and TCP/IP).”

Firstly, the Applicant submits that Philbrick does not teach or disclose the limitation of **“an integrated chip”**. The Examiner states that the processor 408 in FIG. 6 of Philbrick is an integrated chip (see above citation on page 4 of the Office Action). The Applicant submits that FIG. 6 of Philbrick discloses a processor 408 lacking one or more other integrated functions, such as, for example and without limitation, a unified controller including a NIC, a TCP/IP processor, a iSCSI/RDMA processor and/or a RDMA controller as taught and

supported by the Applicant in, for example, FIG. 9 of the current '330 application. Philbrick's FIG. 6 discloses the processor 408 being one of the several functional blocks within the NIC 400. Philbrick's processor 408 does not teach or disclose other integrated functions such as taught by the Applicant. Therefore, the Applicant submits that Philbrick does not teach or disclose **"an integrated chip"**.

Secondly, Philbrick in FIG 6 does not teach or disclose **"an Ethernet connector"**. Instead, Philbrick teaches or discloses using of a plurality of PHY units 422 each connected to a corresponding unit of MAC units 424. Specifically Philbrick in ¶[0066] lines 10-15 discloses:

"Physical connection to the LANs 414 and 416 and SANS 418 and 420 is provided by conventional physical layer hardware PHY 422. **Each of the PHY 422 units are connected to a corresponding unit of media access control (MAC) 424, the MAC units each providing a data link layer connection** between the INIC 400 and one of the networks."

Furthermore, Philbrick in ¶[0065] lines 7-9 discloses:
"The INIC in this example **has network connections or ports that are connected to first LAN 414, second LAN 416, first SAN 418 and second SAN 420.**"

Therefore, the Applicant submits that Philbrick's teaching of separate PHY 422 with corresponding MAC 424 to handle separate network connections contradicts to the Applicant's teaching of **"an Ethernet connector"**.

Thirdly, based on Philbrick's lack of teachings of **"an Ethernet connector"** and **"an integrated chip"**, the Applicant submits that Philbrick

subsequently lacks the teaching of **"an Ethernet connector coupled to the integrated chip"** as recited in claim 18 by the Applicant.

Fourthly, based on Philbrick's lack of teachings of **"an Ethernet connector"** and **"an integrated chip"**, and a subsequent lack of establishing a teaching of **"an Ethernet connector coupled to the integrated chip"**, the Applicant further submits that Philbrick does not teach or disclose **"the Ethernet connector and the integrated chip can handle a plurality of different types of traffic"**.

Therefore, the Applicant submits that Philbrick's does not teach or disclose the limitations of **"an integrated chip; an Ethernet connector coupled to the integrated chip"**, wherein **the Ethernet connector and the integrated chip can handle a plurality of different types of traffic"** as recited in claim 18 by the Applicant. The Applicant respectfully requests that the rejection of independent claim 18 under 35 U.S.C. § 102(e) be withdrawn based on the above reasoning.

Furthermore, The Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of independent claim 18 should such a need arise.

B. Dependent claims 20, 22-25 Are Not Anticipated By Philbrick.

The Applicant submits that Philbrick does not teach or disclose **“a single Ethernet connector”** in claim 23 for the same reasoning presented in claim 18.

The Applicant submits that Philbrick does not teach or disclose **“a single integrated chip”** in claim 24 for the same reasoning presented in claim 18.

Additionally, dependent claims 20 and 22-35 depend from the independent claim 18, and are allowable for at least the same rationale as discussed above for the independent claim 18. Accordingly, the Applicant respectfully submits that dependent claims 20 and 22-35 are also allowable. The Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of dependent claims 20 and 22-35 should such a need arise.

C. Rejection of Independent Claim 26

With respect to independent claim 26, the Applicant submits that Philbrick does not teach at least the limitations of **“communicating with a server comprising using a single fabric for a plurality of different types of traffic; and handling the plurality of different types of traffic via a single layer 2 (L2) connector of the server”** as recited in claims 26 by the Applicant. In the Office Action, the Examiner states in the Office Action at page 5 that Philbrick discloses **a method for communicating with a server comprising:**

"(a) **using a single fabric** for a plurality of different types of traffic (fig. 6, **single path** from a **Ethernet connector 424 to processor 408**); and
(b) **handling** the plurality of different types of traffic via a single layer 2 (L2) connector of the server ([0065] lines 15-21, network traffic TCP/IP and storage traffic iSCSI)"

Firstly, the Applicant submits that FIG. 6 of Philbrick teaches or discloses the server being the host 20. According to FIG. 6 of Philbrick, the host 20 communicates to the NIC 400 through a PCI bus 40. However, the Examiner in the Office Action asserts that the **single path from the MAC 424** (referred as Ethernet connector by the Examiner) **to the processor 408** being equivalent to "communicating **with a server** using a **single fabric**". The Applicant submits that this assertion infers the processor 408 being the host 20 server, or the MAC 424 being the NIC 400, or vice versa. The Applicant submits that this assertion contradicts the disclosure or teaching according to FIG. 6 of Philbrick. Specifically Philbrick in ¶[0066] lines 1-3 refutes such assertion:

"The host **20** is connected to the INIC 400 **by the I/O bus 40**, such as a PCI bus, which is coupled to an INIC bus 404 by an INIC I/O bridge 406, such as a PCI bus interface."

Furthermore, the Applicant submits that Philbrick does not teach or disclose using "**a single fabric for plurality of different types of traffic**". On the contrary, the Applicant has submitted arguments to claim 18 that Philbrick uses separate PHY 422 with corresponding MAC 424 to handle **plurality of different types of traffic** of first and second LAN 414, 416 and first and second SAN 418 and 420 on **separate network connections** as shown in FIG. 6.

Therefore, the Applicant submits that Philbrick does not teach or disclose **“communicating with a server comprising using a single fabric for a plurality of different types of traffic”** as recited in claim 26 by the Applicant.

Secondly, the Applicant submits that Philbrick's does not teach or disclose **“handling the plurality of different types of traffic via a single layer 2 (L2) connector of the server”** The Applicant has already established in the first argument that Philbrick does not teach using **a single fabric for a plurality of different types of traffic** (LANs and SANs), the Applicant submits that the argument presented in claims 18 and 23 also established that Philbrick does not teach using **a single connector to handle a plurality of different types of traffic**. The Applicant submits that an embodiment of the **single connector** is disclosed as a **single layer 2 (L2) connector** in the Applicant's invention. Consequently, the Applicant submits that Philbrick does not teach or disclose **“handling the plurality of different types of traffic via a single layer 2 (L2) connector of the server”** as recited in claim 26 by the Applicant.

Based on the above reasoning, the Applicant submits that Philbrick does not teach or disclose the limitations of **“communicating with a server comprising using a single fabric for a plurality of different types of traffic; and handling the plurality of different types of traffic via a single layer 2 (L2) connector of the server”** as recited in claims 26 by the Applicant. The

Applicant therefore respectfully requests that the rejection of independent claim 26 under 35 U.S.C. § 102(e) be withdrawn.

Furthermore, The Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of independent claim 26 should such a need arise.

D. Dependent claims 27-29 and 31-32 Are Not Anticipated By Philbrick.

In claim 27, on page 6 ¶[16] of the Office Action, the Examiner asserts that "Philbrick further discloses the **single fabric** comprises an Ethernet based fabric ([0065] lines 15-21, Ethernet-SCSI fabric".

The Applicant traverses this assertion and submits that Philbrick on the contrary teaches **separate SCSI connections** for separate ports. For example, **separate network connections (contrary to a single fabric)** are connected between the INIC 400 to first SAN 418 and to second SAN 420. Specifically Philbrick in ¶[0065] lines 7-9 discloses:

"The INIC in this example has network connections or ports that are connected to first LAN 414, second LAN 416, first SAN 418 and second SAN 420."

Furthermore, the Applicant has established arguments in claim 26 to refute Philbrick's teaching of using **single fabric** to handle a plurality of different types of traffic. Therefore the Applicant submits that Philbrick

does not teach or disclose "**single fabric** comprises an Ethernet based fabric" as recited in claim 27 by the Applicant .

Accordingly, the Applicant submits that Philbrick does not anticipate dependent claims 28-29 and 31-32 for the same rationale as in claims 26 and 27 for lack of the teaching of "**the single fabric**".

Additionally, dependent claims 27-29 and 31-32 depend directly or indirectly from the independent claim 26, and are allowable for at least the same rationale as discussed above for the independent claim 26. Accordingly, the Applicant respectfully submits that dependent claims 27-29 and 31-32 are also allowable. The Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of dependent claims 27-29 and 31-32 should such a need arise.

III. REJECTION UNDER 35 U.S.C. § 103

In order for a *prima facie* case of obviousness to be established, the Manual of Patent Examining Procedure ("MPEP") states the following:

"First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine the teaching. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure."

See MPEP at § 2142, citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) (emphasis added). Further, MPEP § 2143.01 states that "the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art suggests the desirability of the combination," and that "although a prior art device 'may be capable of being modified to run the way the apparatus is claimed, there must be a *suggestion or motivation in the reference* to do so'" (citing *In re Mills*, 916 F.2d 680, 16 USPQ 2d 1430 (Fed. Cir. 1990)). Moreover, MPEP § 2143.01 also states that the level of ordinary skill in the art cannot be relied upon to provide the suggestion..., citing *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ 2d 1161 (Fed. Cir. 1999). Additionally, if a *prima facie* case of obviousness is not established, the Applicant is under no obligation to submit evidence of nonobviousness.

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

See MPEP at § 2142.

E. The Proposed Combination of Applicant's Background Of The Invention (AAPA) in view of Philbrick Does Not Render Claims 1-15 Unpatentable

The Applicant turns to the rejection of claims 1-15 by the Examiner under 35 U.S.C. § 103(a) as being unpatentable over Applicant's Admitted Prior Art (background of the invention and FIG. 1-5, hereafter AAPA) and further in view of Philbrick.

E (1) Argument To Rejection Of Independent Claim 1

With regard to claim 1, on page 7 ¶[22] of the Office Action, the Examiner concedes that:

"AAPA does not disclose: wherein at least one of the first server, the second server and the third server handles a plurality of different traffic types over a single fabric."

The Examiner therefore turns to Philbrick to look for AAPA's lack of teaching of the above limitation and states that:

"However, Philbrick discloses: wherein at least one of the first server, the second server and the third server handles a plurality of different traffic types **over a single fabric** (fig. 6, a server handles iSCSI and TCP/IP over a **single fabric connecting the Ethernet connector 424 and processor 408**). Therefore, it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of AAPA and Philbrick to apply multiple traffic support over one fabric of Philbrick to the three-tier servers of AAPA to conserve resources (Philbrick, [0065], lines 1-4, storage traffic and network traffic without the need of a specialized connector)."

The Applicant traverses the rejections to claims 1-15 under 35 U.S.C. § 103(a) and submits that the combination of AAPA and Philbrick do not teach or disclose at least the limitation of **"at least one of the first server, the second server and the third server handles a plurality of different traffic types over a single fabric"** as recited in independent claim 1.

The Applicant submits that the presented argument to claim 26 is applicable to claim 1, that Philbrick does not establish the teaching of the limitation of using **"a single fabric for plurality of different types of traffic"**. Therefore the Applicant submits that the lack of limitation in AAPA cannot be found by combining Philbrick. Consequently, a prima facie case of obviousness rejection to claim 1 cannot be established with the combination of AAPA and

Philbrick. The Applicant therefore respectfully requests that the rejection of independent claim 1 under 35 U.S.C. § 103(a) be withdrawn.

Furthermore, The Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of independent claim 1 should such a need arise.

E (2) Argument To Rejection Of Dependent Claims 2-15

Claims 2-15 depend directly or indirectly from independent claim 1 and therefore should be allowable for at least the same rationale as in claim 1. The Applicant respectfully requests that the rejection of dependent claims 2-15 under 35 U.S.C. § 103(a) be withdrawn.

Furthermore, the Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of dependent claims 2-15 should such a need arise.

F. The Proposed Combination over Philbrick as applied to Claim 26, further in view of Microsoft (Winsock direct and Protocol Offload on SANs, 03/03/2001) Does Not Render Claims 33-35, 30 Unpatentable

The Applicant turns to the rejection of claims 33-35, 30 under 35 U.S.C. § 103(a) as being unpatentable over Philbrick as applied to claim 26 above, and further in view of Microsoft (Winsock direct and Protocol Offload on SANs, 03/03/2001, hereinafter Microsoft). The applicant traverses the rejection of claims 33-35, 30 under 35 U.S.C. § 103(a) for the following reasons.

F (1) Argument To Rejection Of Independent Claim 33

For independent claim 33, in the Office Action page 11, the Examiner concedes that Philbrick does not explicitly disclose step (b) **accessing a cluster over the single fabric**, the Examiner therefore turns to Microsoft to look for the limitation in step (b) and states:

"Microsoft discloses (b) accessing a cluster over the single fabric (fig. 2, page 5 lines 7-8, RDMA support for clustering traffic, RDMA running over TCP/IP). Therefore, it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Philbrick and Microsoft to further provide more functions such as RDMA support on a iSCSI enabled NIC of Philbrick."

Firstly, the Applicant points out that the SAN (System Area Network) in Microsoft (see Microsoft Abstract on page 1) should not be confused with the SAN (Storage Area Network) commonly used for accessing storage over a network environment. Microsoft teaches SAN using Trivial Transport Protocol (TTP) to provide solution to free up CPU and memory bandwidth during offload. Specifically, Microsoft in the Abstract teaches:

"Abstract: This paper provides information for system designers, high-speed interconnect hardware developers, and driver developers about protocol offload and how Microsoft® Winsock Direct (WSD) over **System Area Networks (SAN)** can radically reduce network protocol CPU and memory bottlenecks. This can increase system performance by freeing up CPU and memory bandwidth resources to be used by the application..."

This paper summarizes traditional CPU and memory bottlenecks and provides **a simplified version of the WSD protocol, called Trivial Transport Protocol (TTP)**, to help provide insight into solutions to the issues. Finally, it

provides an analysis of the TTP protocol for how well it solves system bottlenecks...”

Secondly, the Applicant submits that Microsoft teaches the advantages of using SAN running on a dedicated protocol TTP that does not follow the conventional TCP/IP protocol processing path in order to receive larger than maximum transfer unit (MTU) packets. Specifically, FIG. 1 of Microsoft on page 4 states:

“Figure 1 outlines the **differences between the traditional networking model and Winsock Direct**. The “switch” is the key to enabling WSD—it enables the application Winsock calls to be redirected to WSD **rather than going down the conventional TCP/IP path**. WSD then calls down to the SAN Provider to manage fabric and hardware specific issues. The **SAN Provider** is the equivalent to an **NDIS driver, but in user space**.”

The Applicant submits that FIG. 1 of Microsoft shows that the SAN NIC interfaces with the Kernel Bypass that reduces the overhead of the time spent in the protocol stack. Specifically, Microsoft on page 5 states:

“Another typical feature of **SANs** is that they support sending and receiving data **directly from or to a user application**; **the kernel is bypassed, which reduces overhead**. An operating system that provides this kernel bypass capability can radically improve its packet-per-second throughput for small messages because **little time is spent in the protocol stack** and much of the overhead is due to the user-to-kernel space transition.”

Based on the citation above, the Applicant submits that Microsoft's SAN NIC in FIG. 1 is a dedicated interface using a SAN link (see FIG. 2 of Microsoft) to communicate with another dedicated SAN NIC that bypasses the Ethernet TCP/IP protocol stack. Therefore, the Applicant submits that Microsoft's SAN

architecture teaches away the teaching of **"the same single fabric is used to access the cluster, the storage system and the network"** as recited by the Applicant in claim 33.

Accordingly, the Applicant submits that claim 33 should be allowable over Philbrick, Microsoft or the combination of Philbrick and Microsoft for lack of teaching or disclosure of at least the limitation of the steps in **"(a) accessing a storage system over a single fabric; (b) accessing a cluster over the single fabric; and (c) accessing a network over the single fabric"** as recited in independent claim 33 by the Applicant. Therefore, the Applicant respectfully requests that the rejection of claim 33 under 35 U.S.C. § 103(a) be withdrawn.

Furthermore, the Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of dependent claims 2-15 should such a need arise.

F (2) Argument To Rejections Of Dependent Claims 34-35 and 30

Claim 30 is allowable for the same rationale as in claim 33.

Claim 34 is allowable for the same rationale as in claim 23, and submits that Philbrick-Microsoft do not teach or disclose a **"single Ethernet connector"** in claim 34 (see Philbrick FIG. 6 and ¶¶[0065], ¶¶[0066]).

Claim 35 is allowable for the same rationale as in claim 23, and submits that Philbrick-Microsoft do not teach or disclose **"a single Ethernet connector"**

in claim 34 (see Philbrick FIG. 6 and ¶¶[0065], ¶¶[0066]) and subsequently cannot establish a teaching of **“a single Ethernet connector has a single IP address”**.

Additionally, respective dependent claims 30 and 34-35 depend from the respective independent claims 26 and 33, and are allowable for at least the same rationale as discussed above for the respective independent claims 26 and 33. Accordingly, the Applicant respectfully submits that dependent claims 30 and 34-35 are also allowable. The Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of dependent claims 30 and 34-35 should such a need arise.

G. The Proposed Combination over AAPA-Philbrick, further in view of Microsoft (Winsock direct and Protocol Offload on SANs, 03/03/2001) Does Not Render Claims 16, 17, 19 and 21 Unpatentable

The Applicant submits that respective dependent claims 16, 17, 19 and 21 depend directly or indirectly from the respective independent claims 1 and 18, and are allowable for at least the same rationale as discussed above for the respective independent claims 1 and 18. Accordingly, the Applicant respectfully submits that dependent claims 16, 17, 19 and 21 are also allowable. The Applicant reserves the right to argue additional reasons beyond those set forth herein to support the allowability of dependent claims 16, 17, 19 and 21 should such a need arise.

CONCLUSION

Based on at least the foregoing, the Applicant believes that all pending claims 1-35 are in condition for allowance. If the Examiner disagrees, the Applicant respectfully requests a telephone interview, and requests that the Examiner telephone the undersigned Attorney at (312) 775-8093.

The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to the deposit account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

A Notice of Allowability is courteously solicited.

Respectfully submitted,

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